

REMARKS

This Reply and Amendment is intended to be completely responsive to the final Office Action and the Advisory Action. Claims 1-6, 8, 10-23, 25-27, 29-40, 42-61 are pending in this Application and currently stand rejected. Claims 59-61 remain withdrawn. Claims 7, 9, 24, 28 and 41 have been canceled without prejudice to further prosecution on the merits. Independent Claims 1, 20, 22, 25, 31, 37, 54 and 56 have been amended to recite subject matter that the Applicants believe is allowable and overcomes the rejections.

The Applicants understand that the amendments filed in the Applicants' after-final response dated September 27, 2007 have been entered, as indicated in Section 7 of the Advisory Action dated October 19, 2007, except for the amendment to independent Claim 20 which was not entered as indicated in Section 3 of the Advisory Action.

The Applicants respectfully request reconsideration of the present Application in view of the foregoing amendments and in view of the reasons that follow.

Claim Rejections - 35 U.S.C. § 112 ¶ 1

On page 3 of the Detailed Action, Claims 22, 23, and 56-58 were rejected under 35 U.S.C. § 112, first paragraph for lack of enablement. In support of that rejection, the Examiner states that the specification does not provide enablement for 50-95% weight percent iridium as is currently being claimed. In particular, the Examiner notes that the specification "recites that a weight percentage of Ir is preferably 1-99%, more preferably 5-50%, more preferably 5-30%, and most preferably 10-30%." Office Action at p. 3.

The Applicants acknowledge that the amendments filed in the Applicants' after-final response dated September 27, 2007 have overcome the rejections under 35 U.S.C. § 112, first paragraph, as indicated in Section 5 of the Advisory Action.

Claim Rejections - 35 U.S.C. § 112 ¶ 2

Claims 1-24 and 37-58:

On page 4 of the Detailed Action, Claims 1-24 and 37-58 were rejected under 35 U.S.C. § 112, second paragraph as being incomplete for omitting essential structural cooperative relationships. The Examiner contends that the structural relationship of the electrodes and light detector and/or transparent portion is unclear.

Independent Claims 1, 20, 22, 37, 54 and 56 have been amended to recite a relationship between the elements (i.e. “the counter electrode is disposed adjacent to the working electrode and the light detector and/or the transparent portion” for Claims 1, 20 and 54; and “the counter electrode is disposed between the working electrode and the light detector and/or the transparent portion” for Claims 22, 37 and 56). Independent Claim 24 has been canceled without prejudice.

Accordingly, the Applicants submit that the rejection under 35 U.S.C. § 112, second paragraph has been overcome, and respectfully request withdrawal of the rejection and reconsideration and allowance of independent Claims 1, 20, 22, 37, 54 and 56, and their respective dependent claims.

Claims 6-19, 41, and 42:

On page 4 of the Detailed Action, Claims 6-19, 41, and 42 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. For example, the Examiner stated that there is no antecedent bases for “said electrode” in the amended claims. In addition these claims contain recitations to the cell further comprising a counter electrode, even though claim 1 includes such an electrode.

In the Response dated September 27, 2007, the Applicants amended Claims 5, 6, 8, 10, and 42 for clarity and canceled claims 7, 9, and 41. The Applicants acknowledge entry of this amendment under Section 13 of the Advisory Action.

Accordingly, the Applicants submit that the rejection under 35 U.S.C. § 112, second paragraph has been overcome, and respectfully request withdrawal of the rejection and reconsideration and allowance of Claims 5-6, 8, 10-19, 41 and 42.

Claims 37-58:

On page 5 of the Detailed Action, Claims 37-58 were rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps. The Examiner stated that the method claims “merely recite the structural elements that are claimed in the preceding apparatus claims of 1036” and “[a]s such, in the claims which do not set forth method steps, prior art which reads on the apparatus claims will be taken to read on such method claims.”

Independent Claims 37, 54 and 56 have been amended to more particularly set forth method steps.

Accordingly, the Applicants submit that the rejection under 35 U.S.C. § 112, second paragraph has been overcome, and respectfully request withdrawal of the rejection and reconsideration and allowance of independent Claims 37, 54 and 56, and their respective dependent claims.

Claim Rejections – 35 U.S.C. § 103

Claims 1-9, 20, 21, 24, and 37-55 in view of Niyami, Bard and Tench:

On page 7 of the Detailed Action, the Examiner rejected Claims 1-9, 20, 21, 24 and 37-55 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,993,740 (“Niyama”) in view of U.S. Patent Nos. 3,900,418 (“Bard”) and 4,132,605 (“Tench”).

The Examiner stated that Niyama discloses an electrochemiluminescence cell that includes a working electrode, counter electrode, window and light sensor. In addition, he stated other components of Niyama's cell, but points out that Niyama does not disclose electrodes of platinum alloys (5-50% of a second element), rhodium, or rhodium alloys (5-50% of a second element). Office Action at p. 7. The Examiner asserted that Bard discloses an electrode that is generally of a noble metal, including platinum, gold, rhodium, and palladium, any one of which would be well suited for use in ECL solutions. In addition, the Examiner stated that Tench discloses in one embodiment a counter electrode composed of platinum-10% rhodium, and asserts that a counter electrode of platinum-10% rhodium constitutes both a platinum alloy and a rhodium alloy. The Examiner concluded that it would have been obvious to modify Niyama to include an electrode of rhodium as taught by Bard and to include a counter electrode of an alloy such as those taught by Tench. Id. at p. 8.

The Applicants respectfully traverse this rejection.

Tench relates to metal plating: "This invention is related to the field of plating and particularly to the field of quality control of electroplating baths." col. 1, lines 7-9. There is no suggestion in either Tench or Niyama that one could combine the two teachings. Furthermore, one of skill in the present area of electrochemiluminescence would have no reason to use the metal plating electrodes in the ECL cell of Niyama. For at least this reason, the rejection with respect to claims drawn to platinum and rhodium alloys should be withdrawn.

Although Bard discloses electrodes composed of rhodium, Niyama does not discuss this element at all. Additionally, the list of permissible alloys discussed in Niyama does not contain any broadening language-instead it only lists specific metals and indicates that alloys of those metals can be used. It does not say "metals such as," "metals including," "and the like," "and other similar metals," or anything of that nature. Reading Niyama would lead the skilled artisan to believe that he or she must choose from the short list of 6 metals and corresponding alloys thereof.

Independent Claim 1:

Without conceding the propriety of this rejection, The Applicants in order to expedite prosecution have amended independent Claim 1 to recite an electrode comprising a “platinum alloy” with a “first predetermined weight percent of platinum” and a “second predetermined weight percent of an element other than platinum or rhodium” where the “first predetermined weight percent is greater than zero” and the “second predetermined weight percent is from 5% to 50%.”

The Applicants submit that an “electrochemiluminescence cell” comprising, in combination with other elements, an electrode comprising a “platinum alloy” with a “first predetermined weight percent of platinum” and a “second predetermined weight percent of an element other than platinum or rhodium” where the “first predetermined weight percent is greater than zero” and the “second predetermined weight percent is from 5% to 50%” as required by Claim 1 (as amended) is not disclosed, taught or suggested by Niyami, alone or in any proper combination with Bard and/or Tench.

The Applicants respectfully submit that the suggestion to make the combination of Niyami, with Bard and/or Tench would involve hindsight using the Applicants’ own disclosure. To transform the cell of Niyami, alone or in any proper combination with the metal plating of Tench, or the non-alloy electrode materials of Bard, into the subject matter now recited by independent Claim 1 (as amended) would require still further modification, and such modification is taught only by the Applicants’ own disclosure.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claim 1 (as amended) and its respective dependent claims.

Independent Claim 20:

Without conceding the propriety of this rejection, The Applicants in order to expedite prosecution have amended independent Claim 20 to recite an electrode that comprises a “rhodium alloy comprising: a first predetermined weight percent greater than zero of rhodium” and “a second predetermined weight percent from 5% to 50% of an element other than rhodium or platinum.”

The Applicants submit that an “electrochemiluminescence cell” comprising, in combination with other elements, an electrode that comprises a “rhodium alloy” having a “first predetermined weight percent greater than zero of rhodium” and a “second predetermined weight percent from 5% to 50% of an element other than rhodium or platinum” as required by Claim 20 (as amended) is not disclosed, taught or suggested by Niyami, alone or in any proper combination with Bard and/or Tench.

The Applicants respectfully submit that the suggestion to make the combination of Niyami, with Bard and/or Tench would involve hindsight using the Applicants’ own disclosure. To transform the cell of Niyami, alone or in any proper combination with the metal plating of Tench, or the non-alloy electrode materials of Bard, into the subject matter now recited by independent Claim 20 (as amended) would require still further modification, and such modification is taught only by the Applicants’ own disclosure.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claim 20 (as amended) and its respective dependent claims.

Independent Claim 24:

Independent Claim 24 has been canceled without prejudice to further prosecution on the merits.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Independent Claims 37 and 54:

The Applicants have amended independent Claims 37 and 54 to more particularly recite the steps of a method of conducting an electrochemiluminescence assay, and respectfully submit that the rejection of these claims in view of the recited apparatus has now been overcome.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claims 37 and 54 (as amended) and their respective dependent claims.

Rejection over Niyama in view of Bard, Tench, and Wohlstadter

On page 9 of the Detailed Action, dependent Claims 10-19 and 33-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Niyama in view of Bard, Tench, and U.S. Patent No. 6,207,369 (“Wohlstadter”).

The Examiner stated that it would have been obvious to modify the Niyama/Bard/Tench device to include a transparent support taught by Wohlstadter.

The Applicants respectfully traverse this rejection.

Dependent Claims 10-19 depend from independent Claim 1 (as amended).

Dependent Claims 33-36 depend from independent Claim 31 (as amended).

As discussed above, the present invention is not obvious over Niyama/Bard/Tench. Wohlstadter's disclosure does not compensate for the deficiencies of those references. In particular, Wohlstadter does not teach electrodes made of any alloys. Furthermore, the rejection of claims of Claims 25-32 under 35 U.S.C. § 103(a) over Wohlstadter (July 17, 2006, Office Action) has been withdrawn. Consequently, the Office has tacitly acknowledged that Wohlstadter does not render obvious those claims. Claims 33-36 depend from Claim 32, and as a result should also be nonobvious based on the withdrawal of that rejection.

In addition, the Examiner stated that Wohlstadter discloses the use of a waveform generator/potentiostat as a source of electrical energy. However, Wohlstadter does not teach or describe the limitation "capable of maintaining said counter electrode at a constant potential or at a potential that does not vary relative to a potential of said light detector. As the Applicants have previously argued before the Office, that limitation is advantageous by reducing "the noise component of the signal produced by the light detector during an ECL measurement that results from capacitive coupling of the electrodes to the light detector." November 16, 2006, Response to Office Action at p. 22. For at least these reasons, the present rejection of Claims 10-19 and 33-36 should be withdrawn.

Rejection over Liljestrand, in view of Niyama, Bard, Tench, and Kovacs

On page 12 of the Detailed Action, Claims 1-21 and 24-55 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,200,531 ("Liljestrand") in view of Niyama, Bard, Tench, and U.S. Patent No. 5,965,452 ("Kovacs").

The Examiner stated that "[i]t would have been obvious to modify Liljestrand to include an electrode of rhodium and to include a counter electrode of a platinum alloy with 10% rhodium as a second element and to include a counter electrode of a rhodium alloy with 90% platinum as a second element such as taught by Niyama, Bard, and Tench . . . It would have been obvious to modify Liljestrand to include a field extending element that is not a mesh or screen such as taught by Kovacs . . ."

The Applicants respectfully traverse this rejection.

The Applicants submit that the electrode configuration of Kovacs is irrelevant, as it is wholly silent with respect to electrode materials.

Independent Claims 1 and 20:

Independent Claims 1 and 20 have been amended to recite a combination of subject matter that is patentable in view of the cited references (as previously described). The Applicants submit that Claims 1 and 20 are also patentable over the combination of Niyama, Bard, Tench and Liljestrand for the same reasons.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claims 1 and 20 (as amended) and their respective dependent claims.

Independent Claim 24:

Independent Claim 24 has been canceled without prejudice to further prosecution on the merits.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

Independent Claim 25:

Independent Claim 25 has been amended to recite, in combination with other elements, a “field extending element that reduces the electrochemiluminescence incident upon said transparent portion by less than 50%.”

The Examiner asserted that in Kovacs, Fig 8b, “there are six equally sized portions of the electrode along the backbone side on the left which would block the passage of light, thereby such a ratio of the structure blocking passage of light to that of those allowing passage would constitute allowing less than 50% incident electrochemiluminescence.”

The Applicants respectfully point out that “allowing less than 50% incident electrochemiluminescence” as asserted by the Examiner is the *opposite* of what was originally recited in dependent Claim 29, and is now recited in independent Claim 25 (as amended). The recited claim limitation requires that the electrochemiluminescence incident upon the transparent portion is *reduced by less than 50%* by the field extending element. In other words, in the presence of the field extending element, the electrochemiluminescence incident upon the transparent portion *remains greater than 50%* of its value in the absence of the field extending element. Such is not the case with Kovacs, Fig. 8b as stated by the Examiner, where there are six equally sized portions that block the light and only five equally sized portions that pass the light (i.e. the light is reduced by *greater* than 50% - the opposite of that required by Claim 25 as amended).

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claim 25 (as amended) and its respective dependent claims.

Independent Claim 31:

On page 11 of the Detailed Action the Examiner stated “Liljestrand also discloses that electrical energy is supplied to flow cell 120 through working electrode 140 and counter electrode 136 by application of main controller 214 (waveform generator/potentiostat included in main controller) to cause the input fluid to electrochemiluminescence.”

The Applicants have amended independent Claim 31 to recite, among other elements, a “source of electrical energy, coupled to said electrodes, capable of maintaining said counter electrode at a constant ground potential or at a potential that does not vary relative to a potential of said light detector” (emphasis added).

Liljestrand (6,200,531) describes that a “controller 214 applies electrical energy to working electrode 140 and counter electrode 136 to cause the input fluid to electrochemiluminesce. Reference electrode 128 detects a reference voltage in the input fluid and provides a corresponding reference voltage signal to main controller 214. Main controller 214 adjusts its application of electrical energy to working electrode 140 and counter electrode 136 as a function of the reference voltage signal” (see col. 18, lines 15-23).

However, Liljestrand does not appear to disclose a “source of electrical energy, coupled to said electrodes, capable of maintaining said counter electrode at a substantially constant ground potential or at a potential that does not vary relative to a potential of said light detector” as now recited by independent Claim 31 (as amended).

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claim 31 (as amended) and its respective dependent claims.

Independent Claims 37 and 54:

The Applicants have amended independent Claims 37 and 54 to more particularly recite the steps of a method of conducting an electrochemiluminescence assay, and respectfully submit that the rejection of these claims in view of the recited apparatus has now been overcome.

The Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a), and reconsideration and allowance of independent Claims 37 and 54 (as amended) and their respective dependent claims.

* * *

The Applicants respectfully submit that each and every outstanding rejection to the pending claims has been overcome, and that the Application is in condition for allowance. The Applicants respectfully request reconsideration and allowance of pending Claims 1-6, 8, 10-23, 25-27, 29-40, 42-58.

The Examiner is encouraged to contact the undersigned by telephone if the Examiner believes that a telephone interview would advance the prosecution of the present Application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this Application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, the Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Please direct all correspondence to the undersigned attorney or agent at the address indicated below.

Respectfully submitted,

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